

11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244 East 11115 Montgomery, Suite B, Spokane, WA 99206-4776 9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132

20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

(425) 420-9200 (509) 924-9200

FAX 420-9210 924-9290

(503) 906-9200 FAX 906-9210 (541) 383-9310 FAX 382-7588

CHAIN OF CUSTODY REPORT

Work Order #: M107007

CLIENT: BRISTOL	ENT: BRISTOL				INVOICE TO:							TURNAROUND REQUEST in Business Days*							
REPORT TO: ANNE K	CRANAWETTE	TR			BR	15	100	7									nic & Inorganic Analyse		
ADDRESS: AMCHIT	KA ISLAND	A													10 7 STD.		um Hydrocarbon Analy		< 1
PHONE: 907-77	0.0974 FAX: T	70.	09	75	P.O. N	UMBE	R: Z	10	90		,	,			5	4	3 2 1	< 1	
PROJECT NAME:	HITCA					REC	QUESTE	ED AN	ALYSES						STI	D	Please Specif	v	
PROJECT NUMBER: 2	90								- 43		7.3					ОТН	ER		
SAMPLED BY:	-14						3								*Turnare	ound Requests	less than standard may inc	ur Rush Cha	rges.
CLIENT SAMPLE	SAMPLING	00	9	~	3.2	0	Netal								MATRIX	# OF			NCA WO
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Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132 503.906.9200 fax 503.906.9210

Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711 541.383.9310 fax 541.382.7588

7 December, 2001

Anne Kranawetter Bristol Environmental & Engineering 2000 W International Airport C#1 Anchorage, AK 99502-1116

RE: Amchitka

Enclosed are the results of analyses for samples received by the laboratory on 07/03/01 14:28. If you have any questions concerning this report, please feel free to contact me.

This report was recreated from a previously issued final report in order to provide an electronic copy. The final report used for these electronic copies may have been previously issued as an amended report due to client requested changes to sample names, etc. No data has changed since submission of the previously issued final, or amended, report.

Sincerely,

Stephen Wilson

Environmental Group Leader

1112

Work Orders included in this report:

M107007



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Bristol Environmental & Engineering Project: Amchitka 2000 W International Airport C#1 Project Number: 21090

Reported: 07/10/01 16:25

Anchorage, AK 99502-1116 Project Manager: Anne Kranawetter

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
01AMTE06SW	M107007-01	Water	07/03/01 14:15	07/03/01 14:28

COC #147

North Creek Analytical - Mobile Lab



Anchorage, AK 99502-1116

Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-9223 425.420.9200 fax 425.420.9210

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Bristol Environmental & Engineering Project: Amchitka 2000 W International Airport C#1 Project Number: 21090

Reported: 07/10/01 16:25

Polychlorinated Biphenyls per EPA Method 8082

North Creek Analytical - Mobile Lab

Project Manager: Anne Kranawetter

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes			
1AMTE06SW (M107007-01) Water Sampled: 07/03/01 Received: 07/03/01												
Aroclor 1016	ND	0.200	ug/l	1	EPA 8082	07/05/01	07/05/01	0107022				
Aroclor 1221	ND	0.400	"	"	"	"	"	"				
Aroclor 1232	ND	0.200	"	"	"	"	"	"				
Aroclor 1242	ND	0.200	"	"	"	"	"	"				
Aroclor 1248	ND	0.200	"	"	"	"	"	"				
Aroclor 1254	0.426	0.200	"	"	"	"	"	"				
Aroclor 1260	ND	0.200	"	"	"	"	"	"				
Surr: 2,4,5,6-Tetrachloro-m-xylene	58.0 %	44-119										
Surr: Decachlorobiphenyl	59.5 %	54-128										

North Creek Analytical - Mobile Lab



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Bristol Environmental & Engineering Project: Amchitka 2000 W International Airport C#1 Project Number: 21090

Reported: 07/10/01 16:25

Anchorage, AK 99502-1116 Project Manager: Anne Kranawetter

Total Metals per EPA 6000/7000 Series Methods North Creek Analytical - Mobile Lab

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes			
01AMTE06SW (M107007-01) Water Sampled: 07/03/01 Received: 07/03/01												
Arsenic	ND	0.00500	mg/l	1	EPA 6020	07/08/01	07/09/01	0107034				
Cadmium	ND	0.00200	"	"	"	"	"	"				
Chromium	ND	0.00500	"	"	"	"	"	"				
Lead	0.0375	0.00500	"	"	"	"	"	"				
Selenium	ND	0.00500	"	"	"	"	"	"				
Silver	ND	0.00200	"	"	"	"	"	"				
Mercury	ND	0.0000100	"	"	EPA 1631	07/09/01	07/10/01	0107036				

North Creek Analytical - Mobile Lab



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Bristol Environmental & Engineering Project: Amchitka 2000 W International Airport C#1 Project Number: 21090

Reported:

Anchorage, AK 99502-1116 Project Manager: Anne Kranawetter

07/10/01 16:25

Conventional Chemistry Parameters per APHA/EPA Methods North Creek Analytical - Mobile Lab

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
01AMTE06SW (M107007-01) Water					Sampled: 07/0	03/01 Rece	ived: 07/03/	01	
Biochemical Oxygen Demand	ND	4.00	mg/l	1	EPA 405.1	07/04/01	07/10/01	0107026	Q-12
Dissolved Oxygen	7.30	1.00	"	"	EPA 360.1	07/03/01	07/03/01	0107017	
pН	6.90	0.100	pH Units	"	EPA 150.1	"	07/05/01	"	
Total Suspended Solids	ND	10.0	mg/l	"	EPA 160.2	07/03/01	07/04/01	0107018	

North Creek Analytical - Mobile Lab

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Anchorage, AK 99502-1116

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Bristol Environmental & Engineering Project: Amchitka 2000 W International Airport C#1 Project Number: 21090

Reported: 07/10/01 16:25

Microbiological Parameters per APHA Standard Methods North Creek Analytical - Mobile Lab

Project Manager: Anne Kranawetter

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
01AMTE06SW (M107007-01) Water					Sampled: 07	/03/01 Rece	eived: 07/03/	01	
E. Coli	4.10		PN/100 m		SM 9221	07/03/01	07/04/01	0107016	
Total Coliforms	261	2.00	"	"	"	"	"	"	

North Creek Analytical - Mobile Lab

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

North Creek Analytical, Inc.



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Bristol Environmental & Engineering 2000 W International Airport C#1

Project: Amchitka
Project Number: 21090

Reported: 07/10/01 16:25

Anchorage, AK 99502-1116

Project Manager: Anne Kranawetter

Polychlorinated Biphenyls per EPA Method 8082 - Quality Control

North Creek Analytical - Mobile Lab

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 01	107022 -	3520B	Liq-Liq
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Datch 010/022 - 3320D Liq-Liq											
Blank (0107022-BLK1)				Prepared & Analyzed: 07/05/01							
Aroclor 1016	ND	0.200	ug/l								
Aroclor 1221	ND	0.400	"								
Aroclor 1232	ND	0.200	"								
Aroclor 1242	ND	0.200	"								
Aroclor 1248	ND	0.200	"								
Aroclor 1254	ND	0.200	"								
Aroclor 1260	ND	0.200	"								
Surr: 2,4,5,6-Tetrachloro-m-xylene	0.146		"	0.200	73.0	44-119					
Surr: Decachlorobiphenyl	0.178		"	0.200	89.0	54-128					
LCS (0107022-BS1)				Prepared & A	Analyzed: 07/0	05/01					
Aroclor 1254	0.736	0.200	ug/l	1.00	73.6	47-155					
Surr: 2,4,5,6-Tetrachloro-m-xylene	0.125		"	0.200	62.5	44-119					
Surr: Decachlorobiphenyl	0.156		"	0.200	78.0	54-128					
LCS Dup (0107022-BSD1)				Prepared & Analyzed: 07/05/01							
Aroclor 1254	0.630	0.200	ug/l	1.00	63.0	47-155	15.5	50			
Surr: 2,4,5,6-Tetrachloro-m-xylene	0.114		"	0.200	57.0	44-119					
Surr: Decachlorobiphenyl	0.142		"	0.200	71.0	54-128					

North Creek Analytical - Mobile Lab



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Bristol Environmental & Engineering Project: Amchitka 2000 W International Airport C#1 Project Number: 21090

Project Number: 21090 **Reported:**Project Manager: Anne Kranawetter 07/10/01 16:25

Total Metals per EPA 6000/7000 Series Methods - Quality Control

North Creek Analytical - Mobile Lab

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 0107034 - EPA 200/3005

Anchorage, AK 99502-1116

Blank (0107034-BLK1)				Prepared: 07/07/01 Analyzed: 07/09/01
Arsenic	ND	0.00500	mg/l	
Cadmium	ND	0.00200	"	
Chromium	ND	0.00500	"	
Lead	ND	0.00500	"	
Selenium	ND	0.00500	"	
Silver	ND	0.00200	"	
I CS (0107024 DS1)				Propored: 07/07/01 Apolyzod: 07/00/01

LCS (0107034-BS1)	Prepared: 07/07/01	Analyz	ed: 07/09/01			
Arsenic	0.0959	0.00500	mg/l	0.100	95.9	80-120
Cadmium	0.0976	0.00200	"	0.100	97.6	80-120
Chromium	0.0956	0.00500	"	0.100	95.6	80-120
Lead	0.0950	0.00500	"	0.100	95.0	80-120
Selenium	0.100	0.00500	"	0.100	100	75-115
Silver	0.101	0.00200	"	0.100	101	80-120

Duplicate (0107034-DUP1)	Sou	rce: M1070	18-01	Prepared: 07/07/01 Analyzed	: 07/09/01		
Arsenic	ND	0.00500	mg/l	ND	9.48	20	
Cadmium	ND	0.00200	"	ND	58.1	20	Q-06
Chromium	ND	0.00500	"	ND	7.06	20	
Lead	0.0442	0.00500	"	0.0450	1.79	20	
Selenium	ND	0.00500	"	ND	68.3	20	Q-06
Silver	ND	0.00200	"	ND	21.1	20	Q-06

Matrix Spike (0107034-MS1)	Sou	ırce: M1070	18-01	Prepare	ed: 07/07/01	l Analyz	zed: 07/09/01
Arsenic	0.113	0.00500	mg/l	0.100	ND	108	75-125
Cadmium	0.105	0.00200	"	0.100	ND	105	75-125
Chromium	0.104	0.00500	"	0.100	ND	102	75-125
Lead	0.140	0.00500	"	0.100	0.0450	95.0	75-125
Selenium	0.108	0.00500	"	0.100	ND	105	75-125
Silver	0.103	0.00200	"	0.100	ND	103	75-125

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Bristol Environmental & Engineering 2000 W International Airport C#1

Project: Amchitka
Project Number: 21090

Reported:

Anchorage, AK 99502-1116

Project Manager: Anne Kranawetter

07/10/01 16:25

Total Metals per EPA 6000/7000 Series Methods - Quality Control

North Creek Analytical - Mobile Lab

	1101	ui Cieek F	xiiai y u	<u>cai - 1910</u>	DHC La	U				
		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 0107036 - EPA 1631										
Blank (0107036-BLK1)				Prepare	d: 07/09/0	1 Analyz	ed: 07/10/0)1		
Mercury	ND	0.0000100	mg/l							
LCS (0107036-BS1)				Prepare	d: 07/09/0	1 Analyz	ed: 07/10/0)1		
Mercury	0.000127	0.0000100	mg/l	0.000125		102	85-115			
Duplicate (0107036-DUP1)	Se	ource: M1070	18-01	Prepare	d: 07/09/0	1 Analyz	ed: 07/10/0)1		
Mercury	ND	0.0000100	mg/l		0.0000150)		52.6	20	Q-06
Matrix Spike (0107036-MS1)	Se	ource: M1070	18-01	Prepare	d: 07/09/0	1 Analyz	ed: 07/10/0)1		
Mercury	0.000159	0.0000100	mg/l	0.000125	0.0000150	115	75-125	•	•	•

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Bristol Environmental & Engineering 2000 W International Airport C#1

Project: Amchitka Project Number: 21090

Reported:

Anchorage, AK 99502-1116

Project Manager: Anne Kranawetter

07/10/01 16:25

Conventional Chemistry Parameters per APHA/EPA Methods - Quality Control

	<u>North</u>	<u>1 Creek 2</u>	<u>Analytic</u>	<u>al - Mo</u>	<u>bile Lal</u>	<u> </u>				
	D	Reporting	** *.	Spike	Source	w DEG	%REC	222	RPD	N 7
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 0107017 - Wet Chem										
Duplicate (0107017-DUP1)	Sou	rce: M1070	007-01	Prepare	d: 07/03/0	1 Analyz	ed: 07/05/0	1		
pH	6.90	0.100	pH Units		6.90			0	200	
Batch 0107018 - Wet Chem										
Blank (0107018-BLK1)				Prepare	d: 07/03/0	1 Analyz	ed: 07/04/0	1		
Total Suspended Solids	ND	10.0	mg/l							
LCS (0107018-BS1)				Prepare	d: 07/03/0	1 Analyz	ed: 07/04/0	1		
Total Suspended Solids	123	10.0	mg/l	121		102	80-120			
Duplicate (0107018-DUP1)	Sou	rce: M1070	007-01	Prepare	d: 07/03/0	1 Analyz	ed: 07/04/0	1		
Total Suspended Solids	ND	10.0	mg/l		ND			0	20	
Batch 0107026 - Wet Chem										
Blank (0107026-BLK1)				Prepare	d: 07/04/0	1 Analyz	ed: 07/10/0	1		
Biochemical Oxygen Demand	ND	4.00	mg/l							
LCS (0107026-BS1)				Prepare	d: 07/04/0	1 Analyz	ed: 07/10/0)1		
Biochemical Oxygen Demand	178	4.00	mg/l	198		89.9	75-125			
Duplicate (0107026-DUP1)	Sou	rce: M1070	007-01	Prepare	d: 07/04/0	1 Analyz	ed: 07/10/0	1		
Biochemical Oxygen Demand	ND	4.00	mg/l		ND	•	•	•	40	Q-1

North Creek Analytical - Mobile Lab



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Project: Amchitka
Project Number: 21090

Reported:

Anchorage, AK 99502-1116

Project Manager: Anne Kranawetter

07/10/01 16:25

Microbiological Parameters per APHA Standard Methods - Quality Control

North Creek Analytical - Mobile Lab

		R	eporting		Spike	Source		%REC		RPD	
I	Analyte Re	esult	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 0107016 - Micro Extractions

Blank (0107016-BLK1)		Prepared: 07/03/01 Analyzed: 07/04/01
E. Coli	ND	2.00 MPN/100
		ml
Total Coliforms	ND	2.00 "

North Creek Analytical - Mobile Lab



Reported:

07/10/01 16:25

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Bristol Environmental & Engineering Project: Amchitka 2000 W International Airport C#1 Project Number: 21090

Project Manager: Anne Kranawetter

Notes and Definitions

Q-06 Analyses are not controlled on RPD values from sample concentrations less than 5 times the reporting limit.

Q-12 None of the sample dilutions selected met the criteria of at least 2 mg/l dissolved oxygen depletion.

DET Analyte DETECTED

Anchorage, AK 99502-1116

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis. MRLs are adjusted if %Solids are less than 50%.

wet Sample results reported on a wet weight basis (as received)

RPD Relative Percent Difference

North Creek Analytical - Mobile Lab

Items for Project Manager Review

LabNumber	Analysis	Analyte	Exception
			Report recreated from: \\sisters\elmnt\Report\M107007 FINAL 07 10 01 1625.mdb
			Default Report (not modified)
0107026-DUP1	BOD-405.1	Biochemical Oxygen Demand	Q-12
0107034-DUP1	Ag Total ICPMS 6020	Silver	Q-06
0107034-DUP1	Ag Total ICPMS 6020	Silver	Exceeds RPD limit
0107034-DUP1	Cd Total ICPMS 6020	Cadmium	Q-06
0107034-DUP1	Cd Total ICPMS 6020	Cadmium	Exceeds RPD limit
0107034-DUP1	Se Total ICPMS 6020	Selenium	Q-06
0107034-DUP1	Se Total ICPMS 6020	Selenium	Exceeds RPD limit
0107036-DUP1	Hg Total CVAF 1631	Mercury	Q-06
0107036-DUP1	Hg Total CVAF 1631	Mercury	Exceeds RPD limit
M107007-01	BOD-405.1	Biochemical Oxygen Demand	Q-12